

Comment from Aaron Kiefer

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As described in request to extend the ANPRM comment period, a multidisciplinary team of engineers, crash reconstructionists, and safety advocates conducted a series of passenger vehicle vs semitrailer side crash tests to illustrate the efficacy of side underride guards. Testing on August 3, 2023 revealed that underride crashes can be prevented in closing speeds above 40 mph and in locations rearward of the rear trailer axles via lightweight side underride guard systems such as the AngelWing and SafetySkirt. Crash test video footage is available at www.TrailerGuards.com indicating crash performance. Crash data is available upon request.

Four crash tests were conducted in the following order:

1.2016 Ford Fiesta sedan into AngelWing guarded dry van trailer, 39 mph closing velocity, 45 degree collision angle (resulting in zero passenger compartment intrusion)

2.2008 Chevrolet Malibu sedan into an unguarded dry van trailer, 38 mph closing velocity, 45 degree collision angle (resulting in vehicle collapse and passenger compartment intrusion)

3.2003 Chevrolet Impala sedan into a SafetySkirt guarded dry van trailer behind the rear axles, 36 mph closing velocity, 90 degree collision angle (resulting in zero passenger compartment intrusion)

4.2010 Chevrolet Malibu sedan into a SafetySkirt guarded dry van trailer in front of the rear axles, 43 mph closing velocity, 90 degree collision angle (resulting in zero passenger compartment intrusion)

Crashes above 40 mph and crashes rearward of the rear axles were not included in the NHTSA cost-benefit analysis as part of the side underride guard ANPRM of April 21, 2023. This testing provides substantial data that these types of otherwise fatal crashes can be prevented by simple side underride guards. NHTSA's cost-benefit analysis (CBA) presented in the side underride guard ANPRM is flawed. The CBA substantially under-reports underride frequency, over-estimates crash speed and severity, and discounts side guarding efficacy. NHTSA needs to retract the April 21, 2023 ANPRM and replace it with an objective, evidence based analysis.

Future testing is being contemplated at 45-50 mph closure speed. Modern vehicles have sufficient systems (energy absorbing structures, multi-stage airbags, and load limiting restraints) to manage crash energy and to protect occupants in high speed crashes. Unguarded semitrailers create a crash incompatibility with passenger vehicles and vulnerable road users. As a result, passenger vehicle safety technology is ineffective in an underride crash. Guarded trailers protect VRUs, create crash compatibility, prevent PCI, and allow the vehicle's safety systems to protect the occupant. Please consider this test data when weighing regulatory guidance.